

Windows and rooflights —

Part 2: Durability and maintenance

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windows, doors and frames

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Foreword

This code of Practice makes reference to the British Standards listed in 1.2.

To avoid unnecessary delay, information collected for the Code is being issued in a series of separate parts covering particular aspects of the work. The parts will finally be assembled, with any necessary amendment and editing to form the complete Code.

NOTE This Code gives values in International System (SI) units.

For further information, reference should be made to BS 3763, *"International System (SI) units"* and PD 5868, *"The use of SI units"*.

**This Code of Practice represents a standard of good practice.
Compliance with it does not confer immunity from relevant statutory
and legal requirements.**

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 15 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 General

1.1 Scope

This Part of the Code deals with the durability and maintenance of wood windows and of metal windows and roof glazing bars in buildings.

1.2 British Standards

The following British Standards are relevant to the recommendations of this Code:

BS 144, *Coal tar creosote for the preservation of timber.*

BS 544, *Linseed oil putty for use in wooden frames.*

BS 729, *Zinc coatings on iron and steel articles.*

BS 747, *Roofing felts.*

BS 881, 589, *Nomenclature of commercial timbers, including sources of supply.*

BS 970, *Wrought steels: Part 4. Stainless, heat resisting and valve steels.*

BS 1004, *Zinc alloys for die casting and zinc alloy die castings.*

BS 1186, *Quality of timber and workmanship in joinery.*

BS 1204, *Synthetic resin adhesives (phenolic and aminoplastic) for wood.*

BS 1224, *Electroplated coatings of nickel and chromium.*

BS 1400, *Copper alloy ingots and copper and copper alloy castings.*

BS 1449, *Steel plate, sheet and strip.*

BS 1470, *Wrought aluminium and aluminium alloys for general engineering purposes. Sheet and strip.*

BS 1471, *Wrought aluminium and aluminium alloys for general engineering purposes. Drawn tube.*

BS 1472, *Wrought aluminium and aluminium alloys for general engineering purposes. Forging stock and forgings.*

BS 1473, *Wrought aluminium and aluminium alloys for general engineering purposes. Rivet, bolt and screw stock for forging.*

BS 1474, *Wrought aluminium and aluminium alloys for general engineering purposes. Extruded round tube and hollow sections.*

BS 1490, *Aluminium and aluminium alloy ingots and castings for general engineering purposes.*

BS 1615, *Anodic oxidation coatings on aluminium.*

BS 1706, *Electroplated coatings of cadmium and zinc on iron and steel.*

BS 2874, *Schedule of copper and copper alloys. Rods and sections (other than forging stock).*

BS 3051, *Coal tar oil types of wood preservatives (other than creosote to BS 144).*

BS 3382, *Electroplated coatings on threaded components.*

BS 3987, *Anodized wrought aluminium for external architectural applications.*

BS 4072, *Wood preservation by means of water-borne copper/chromelarsenic compositions.*

CP 152, *Glazing and fixing of glass for buildings.*

CP 153-1, *Windows and rooflights — Part 1: Cleaning and safety.*

2 Wood windows

2.1 General

2.1.1 The selection of timber species for window joinery is necessarily governed by the appearance, durability, cost and suitability of wood species for machine woodworking and their availability in the quality required for joinery manufacture.

2.1.2 The service life of window joinery may be governed more by the amount of moisture which enters the wood than by any other single factor. Moisture penetration causes swelling, distortion and failure of surface finishes, and introduces risks of complete failure by decay caused by the attack of wood-destroying fungi. Factors such as the natural decay resistance of heartwood, the presence of sapwood, the preconditioning of the timber prior to manufacture, preservative treatments and handling prior to utilization, as well as the designs employed and the care with which they are executed, affect the moisture content of the wood in service and together determine the consequences of moisture penetration.

2.1.3 The maintenance of wood windows usually means the periodic application of some form of protective coating, most commonly paint, the renewal of putty as necessary, and possibly the replacement of broken panes of glass from time to time. The maintenance of hinges and fasteners is usually left to chance and they may become so stiff that they suffer distortion or even breakage when forcibly operated. These fittings should be inspected and receive attention, including lubrication¹⁾, whenever the windows are repainted. (See **3.3.2** for the metals which may be used in the window fittings.) Some recommendations on the frequency of renewal of the surface finishes in various circumstances are included in Table 1. Ideally, repainting schedules should be phased so that the original paint surface remains intact, but in practice stripping will be necessary at intervals depending on the number of coats applied to avoid too heavy a build-up of paint which may prevent the closing of windows and cause distortion of frames and hinges.

2.1.4 Maintenance should be directed particularly to preventing the ingress of water at the vulnerable points: the bottom rails and frame joints, and the glazing putties. The putty should be renewed if loose (with repriming of the rebates) and bevelled to shed water. Cracks in adherent putty, especially at the glass face, should be filled with a liberal application of primer or undercoat, and the finishing coat of paint overlapped on to the glass. Open joints in the frame should be filled with a resilient stopping (preferably a white lead/oil paste, not a water-mixed compound) after brushing primer well into the cracks. Extra coats of paint should be applied to the bottom rails and sills and the horizontal surfaces of transoms, since these are the most vulnerable surfaces. If access to the windows is easy it may be useful to repaint these surfaces more frequently than other parts of the windows.

2.2 Sapwood

2.2.1 The sapwood of most species is easily permeated by moisture, and the decay resistance of all sapwood is low. Nevertheless, the sapwood of joinery softwoods has been used, but recent experience indicates that changes in the design and utilization of window joinery, together with improved draught exclusion which leads to more condensation on windows, are imposing greater risks of moisture penetration and hence of decay. The exclusion of sapwood from the most widely used softwoods is not feasible, so the increased risks can be met only by the use of preservative treatments. Traditionally, sapwood has always been excluded from high-class joinery hardwoods such as teak and oak. Alternative hardwoods are now available which have a wide sapwood and, unless the sapwood can be excluded, these hardwoods must be regarded as non-durable.

2.3 Preconditioning and protection on site

2.3.1 Sawn timber is imported either in the “green” or “shipping dry” condition. In the former instance, the wood has not been deliberately seasoned in any way; in the latter, though the surface will be dry, the interior may sometimes have a high moisture content. Before the timber is used it has to be dried to approximately the average value of the moisture content range it is likely to experience in service. This reduces the amount of movement of the timber after manufacture and so lessens any risk of the opening up of joints which can lead to the ingress of water and decay. The moisture content of the timber at the time of machining into components should be 17 % to 20 %.

¹⁾ In new windows there is an increasing use of hinges and pivots bushed with plastics and often designed to provide friction. These should not be oiled.